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MEETING OF THE HIGH ALTITUDE POLLUTION PROGRAM SCIENTIFIC ADVIS--ETC(U)
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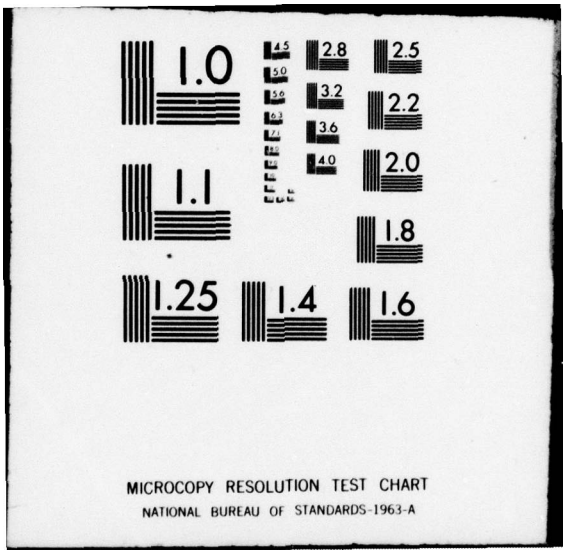
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Report No. FAA-EE-78-31

EXECUTIVE SUMMARY
FIRST MEETING
of the
HIGH ALTITUDE POLLUTION PROGRAM
SCIENTIFIC ADVISORY COMMITTEE

November 29 - December 1, 1978

Washington, D.C.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Office of Environment and Energy
Washington, D.C. 20591

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16. Abstract

This is the Executive Summary of the first meeting of the High Altitude Pollution Program Scientific Advisory Committee which met in Washington, D.C. from November 29-December 1, 1978. The Committee is composed of 25 members who are experts in a number of fields related to atmospheric chemistry and physics, aviation, and engineering. They are listed in Appendix 1. This is a summary of the Committee's presentation of its findings to Mr. Langhorne Bond, Administrator of the Federal Aviation Administration.

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LEVEL II

FIRST MEETING

OF THE

HIGH ALTITUDE POLLUTION PROGRAM

SCIENTIFIC ADVISORY COMMITTEE

November 29 - December 1, 1978

Washington, D.C.

EXECUTIVE SUMMARY

BACKGROUND

The High Altitude Pollution Program (HAPP) Scientific Advisory Committee held its first meeting on November 29 - December 1, 1978, at the Federal Aviation Administration Headquarters in Washington, D.C. The Committee is composed of 25 members who are experts in a number of fields related to atmospheric chemistry and physics, aviation, and engineering. Seven foreign nations are represented on the Committee, which includes 12 non-U.S. members. A list of Committee members is attached as Appendix 1. A copy of the Committee Charter may be found in Appendix 2.

The following pages have been taken directly, for the most part verbatim, from the Transcript of Proceedings of the meeting. The material constitutes the Committee's presentation of its findings to the Administrator of the Federal Aviation Administration, Mr. Langhorne Bond. The discussion has been edited for ease of reading. A complete copy of the Transcript may be reviewed at the office of the High Altitude Pollution Program (AEE-10), Federal Aviation Administration, 800 Independence Avenue, S.W., Washington, D.C. 20591. Telephone (202) 755-8933.

INTRODUCTION

DR. OLIVER: What we have done, Mr. Bond, is to break the Committee's deliberations on the High Altitude Pollution Program into three "issue" areas, and we have asked three individuals from the group to report to you on these three areas. The first issue is "What is the FAA and the HAPP role in the overall problem of pollution of the upper atmosphere?" There are many agencies and groups working in this general scientific field, so the first question had to do with how HAPP would fit into this overall program area. The second issue is "HAPP as a program." We assume the existence of HAPP, and then we examine the HAPP program itself. The third issue has to do with "How the Committee itself can function, what role it should play, and how it should report its findings to you and to the program manager."

Maybe you would like to say a few words before we proceed?

MR. BOND: I would, being a lawyer. I was reading the list of the folks who are on the Committee, and I want to tell you that I am intimidated and overwhelmed by the collection of scientific talent and engineering talent that is present here today. I am married to a scientist who is also a PhD. Therefore, I am familiar as well as overwhelmed with what it is like to be with scientific minds. We are glad to have them in the FAA since we tend to be more practical in our outlook and more engineering oriented. We hope that with the help of the folks who are here and the obvious competence and reflective thought, that we will not overlook the consequences of what we do to the long-term survival of the globe, and to the environment of other countries, which so many of you represent. We are in your debt, especially to those who have come to help us on this Committee from around the world. There are only a few absences from the Committee from our foreign friends, and there are many people who have come a long way to participate in it. As institutions, the FAA and the American government are very grateful and indebted to you.

Of course, there is a little bit of self-interest in our addressing these issues. We all breathe the same air, and we will have the same high altitude atmospheric consequences visited equally upon us all. This probably reaffirms what I was taught as a graduate student in London and in Holland. International law should be called transnational law because it affects us all equally in the long run. As the world becomes smaller, probably through the miracle of flight, the borders that separate our countries become less significant in the face of scientific change. Political institutions remain less sophisticated than scientific thought, but nontheless, as I say, we are all in the same spaceship and all dwellers in the same thin skin of atmosphere and environment that surrounds the globe. I am quite conscious of that.

I was greatly privileged a few moments ago to have been visited by Sir Frank Whittle, who has been a hero of mine since I was old enough to know better. Since I was, in my space law days, called capable of prescient thought, I hope in view of old connections and affections that it is not the jet engine that is on trial here today and I, therefore, plead with all of your scientific minds here to be tolerant of those engineers who are in your presence.

That's all that I have to say. I hope we have treated our visitors well here during your stay. Washington is a nice place to visit, but it is not such a pleasant place to visit for three days in a conference room. So I hope your stay has been socially acceptable as well as professionally, which I know it will be professionally.

Thank you for your patience in listening to me.

THE ROLE OF FAA

DR. OLIVER: The first issue area is the FAA role and the HAPP role in the overall problem is to be reported by Dr. Jerry Mahlman of the Geophysical Fluid Dynamics Laboratory in the Princeton University. He will report on issues area No. 1.

DR. MAHLMAN: It is my privilege to be able to present to you the rapporteur's summation of the deliberations of what we call issues area No. 1, the role of HAPP. In helping to define the role of HAPP as a program in the FAA, we as a Committee, first defined how we see the current role of HAPP and its present impact. We viewed these observations as providing a necessary base for the larger evaluation of whether or not these current roles are appropriate. Overall, we find the present HAPP involvements to be quite consistent with the stated goals, its resources, and the current scientific and technical questions impeding reliable assessment of aircraft impact.

Our perspectives are summarized below in a series of observations.

(1) The HAPP role relative to specific aircraft impact. It is clear to us that if information is required on specific questions related to environmental impact of aircraft, the answers will not be satisfactorily obtained without a specific emphasis program such as that of HAPP. It is our view that the FAA is uniquely qualified to be involved in such a program We observe that a program of this character is most effective when it exists for a long enough period to encourage and support meaningful and significant research. This is particularly important in this problem area where rapid development of scientific results often leads to a redefinition of the problem in addition to an improved understanding.

(2) The HAPP role in problems shared with other groups. The first I would like to discuss is the HAPP role in the impact of aviation on ozone. Groups other than HAPP are concerned with ozone impact questions, particularly in problems involving fluorocarbons and nitrogen fertilizers. We believe that HAPP is already being felt as an important contributor in these other areas both nationally and internationally. In addition, it is clear to us that HAPP has played an important role in stimulating research efforts in other agencies and in other countries. Although these other environmental impact issues are not under HAPP's specific charge, the work required to effect meaningful progress is very similar or in fact often the same. It is our view that such overlap is necessary and desirable and should even be strongly encouraged. The HAPP role to date has been one in

which a number of significant gaps in larger questions have been identified and addressed. We believe that this broader perspective of HAPP is an important aspect of the program which we strongly endorse. Meaningful progress on such difficult issues appears even to require such flexibility. In fact, the interactions that exist in these types of environmental impact problems are such that none of these problems can be treated in isolation.

Second, we address the HAPP impact on climate research. In this area, the HAPP involvement is considerably less than in the ozone impact problem. The lesser involvement arises from the current indications that the potential climatic impact of aircraft exhaust is probably significantly smaller than that due to other anthropogenic effects such as those due to carbon dioxide or the fluorocarbons. It is conceivable, however, that this perspective could be altered in the future. If so, it would appear that the current anticipated modest HAPP involvement in the climate impact problem would have to be accelerated.

(3) The HAPP role in monitoring of important trace constituents. The HAPP involvement and responsibility here is stronger than its currently defined tasks would suggest. HAPP has served as a significant source of pressure to encourage some highly significant monitoring efforts. It appears to us that the current federal structure for initiating efforts to monitor quantities of concern to HAPP is poorly defined and perhaps too weak to be effective. HAPP's role in raising these monitoring issues and in initiating monitoring efforts must continue.

(4) The HAPP role in the aircraft industry. The aircraft industry appears to accept the need for an organization such as HAPP to evaluate on a continuing basis the potential impact of aircraft flight. However, because of the short duration of the HAPP effort, the HAPP program to date has apparently not effected any substantial influence on the aircraft industry.

In summary, this Scientific Advisory Committee sees HAPP as filling a most important role and expects it to continue to do so in the future. We believe that the FAA deserves congratulations for such a meaningful program. In short, we see that HAPP is doing something important; we see it as filling some gaps that are not being addressed elsewhere; we see HAPP as providing leverage for research elsewhere; and we think it is doing overall an excellent job.

MR. BOND: Well said. Well condensed. That is not footnoted and subject for publication. All right I agree. The next committee?

HAPP AS A PROGRAM

DR. OLIVER: The next rapporteur is Dr. Ralph Cicerone of Scripps Institute of Oceanography, although he is an atmospheric scientist. He is going to discuss HAPP as a program, rather than relative to those of other agencies.

DR. CICERONE: I won't be reading a statement, so I might be less concise, but let me outline what I am going to say before I say it. First of all, I will mention the premises and goals of HAPP and what the Committee thinks about those; the achievements to date; the staff and managerial matters; procurement procedures; the fact that the HAPP goals have not been attained, although there has been significant progress; some comments on the plan; some specific comments on program elements and funding; a little bit on contingency plans for increased or decreased funding, and I am going to end on a slight note of warning to those who might be a little bit too willing to accept the present assessment which is seemingly benign at least in one of the features.

As to the premises of HAPP, let me begin. We find these spelled out in the Planning Document, and they appear to be reasonable. At the end of 1974, research in this field, mostly through the CIAP program of the Department of Transportation, did not leave us with quite the quantitative basis for regulation of proposed aircraft or even present aircraft that might be desirable.

The HAPP program goals then remind us specifically of what the program premises are, and I am going to read just one sentence: "The objective of HAPP is to quantitatively determine the requirement for reduced cruise-altitude exhaust emissions and in conjunction with the EPA and the International Civil Aviation Organization, to ensure that, if necessary, appropriate regulatory action is taken to avoid environmental degradation."

The Committee wishes to emphasize specifically that the total amount of ozone overhead is not the only concern. There are several other possible effects that must be considered, including redistribution of ozone in the atmosphere. Even in the scenario where the total amount overhead stays the same, redistributions can lead to noticeable changes in atmospheric circulation and possibly in climate. We must also pay attention to unidentified effects of aircraft fleets. We would point, for example, to the Clean Air Act of 1977 as being a little bit more cognizant of the other issues.

The achievements to date in the program, as outlined in the Acquisition Paper, we find to be significant and, I might add, authentic. We are familiar enough with the specific projects claimed as progress in the Acquisition Paper to concur that they do represent progress. Many, if not all of them, would not have occurred without the existence of the HAPP program, and we take this opportunity to compliment the staff of HAPP for their efficiency and for their alertness to opportunity.

We must point out that, to many of us, the procurement procedures offer little hope for penetration. We worry about whether interpretation by FAA of government procurement procedures has in fact limited response to requests for proposals. Even higher quality applied research might be forthcoming if present interpretations, which we understand are rendered by FAA legal people, could be modified.

We point out that the goals of the HAPP study have not yet been attained. The plans, as outlined in all the planning documents and the Acquisition Paper, seem to us to be reasonable and realistic. However, they presume the existence of a healthy research environment elsewhere in the United States and the rest of the world. This presumption may or may not turn out to be valid in the future. What this means is that the success of HAPP toward attaining the goals is somewhat reliant on this presumed existence of the other research programs. I will mention this again later.

Let me talk specifically about one of the larger program elements, and funding for it, namely, the field measurement program. This field of applied science, the uncovering and quantitative assessment of atmospheric and climatic effects, is one in which theoretical work, as simplified as it appears to experts, is really ahead of experimental verification. We desperately need field measurement work to verify, test, and expand upon available theories. It is of paramount importance to test in the field the predictions of currently available quantitative models, and thus to make it possible to generate more realistic models and to gain more confidence in the predictive capabilities of the models we have now.

We strongly endorse the concept of the field measurements program, and need instrumentation development by and for FAA and HAPP to gather data, especially on key chemical species in the nitrogen oxide family and the chemicals that control them. High quality data are needed, and they might otherwise be gathered by other research operations that are not specifically concerned with aircraft effects. We mentioned that improvement of models is presumed. We think we understand the simple pieces that go into these models. The problem is the time we require to put the pieces together into an adequate simulation of nature in its complexity.

Let me mention a word about funding and contingency plans, if that is the right term. We think that an increase in HAPP funding beyond what is requested in the Acquisition Paper would probably not accelerate progress toward the goals very much, but an increase might greatly improve the chances of ever attaining the goals and would reduce some of the reliance that HAPP and FAA now have on other research programs. Any further decrease in funding, or slowing down, beyond that requested in the Acquisition Paper would, we think, greatly reduce the chances of eventual success of HAPP.

Finally, just a polite but firm warning to those who would be content with the present assessment which is of seemingly benign consequence of aviation fleets. Recent reductions in the calculated effect on the total ozone due to aircraft operations have to be taken carefully. First of all, we do not know if the picture is completely accurate. If it is accurate, we have to be alert to the fact that we might be buying another problem as a tradeoff for the so-called no change in total ozone overhead. For example, we must be very careful about buildup of ozone in the lower atmosphere (the troposphere) and possibly even climatic effects. I should also point out that this is not the only identified problem. We still must be wary of climatic effects on circulation changes in the upper atmosphere, and ever alert to problems that have not been identified yet, at least in any quantitative way.

I think that is a fair summary of the Committee's view on the total HAPP program and the managerial aspect and the technical contents.

In conclusion, we concur with the goals of HAPP and the methods and plans outlined. We think the Committee can help in a continual review of progress toward the goals which have not been attained yet. We worry somewhat about the reliance of HAPP on the presumed robustness of research elsewhere, and would not like to see elements of HAPP reduced much beyond what they already are.

MR. BOND: I'm not sure that that isn't a circumlocution for saying you would like more money or need more money.

DR. CICERONE: No. The interweaving of research sponsored by NASA, NSF, NOAA, Department of Energy, HAPP people, and the rest of us are making use of that research as we think about the specific problem of aircraft. We are aware of threats to the existence of that continued research elsewhere and think that it would impinge very seriously on the success of HAPP if research elsewhere were cut. We don't see much fat in what is proposed for HAPP.

MR. BOND: What were you talking about when you made references to the general counsel and the procurement system?

DR. CICERONE: Two items--the requests for contract proposals are difficult to penetrate for those of us who do not have a legal and business staff up front. Secondly, there appears to be no mechanism for unsolicited proposals for applicable research. We think that the scope and quality of the research can be, if it has not already been, limited by the procurement procedures.

MR. BOND: But the procurement procedures are only a mechanism for putting out what someone has previously stated is the best sort of work to do. Why don't you go to the people who write the procurement program? How does the procurement program affect things?

MR. BRODERICK: I think the difficulty he is talking about, Mr. Bond, is really two-fold. One is that the procurement package that goes out with the standard contractual form from the FAA, for requests for proposals for R&D effort, is in fact a voluminous document which the academic and research community finds almost impossible to penetrate. We have had a number of experiences where in fact universities have spent considerable time and effort on proposals only to have them rejected as being non-responsive because of what amounts to a technicality. It is a perfectly reasonable thing to do in a normal industrial R&D environment, but when someone proposes, for example, an alternate approach which is scientifically very nice but legally non-responsive, it is difficult to explain this to a scientist.

The other point that Dr. Cicerone mentioned was the unsolicited proposal situation, and the fact is that within the FAA policy as it currently exists in writing, in order to fund any unsolicited proposals (which represent to most of the people in the room a very good insight and application of that insight to your problem) you must justify the uniqueness of that organization on a sole source basis, and you can't do that because what the people are selling is the concept and the application of that concept to your problem. Once this concept is stated to the research community as a whole, the others can say "Gee, that was a terrific idea; I think I'll make a proposal like that." You have taken what the researcher has spent all his time thinking about and distributed it to everyone else for their use. It is a difficult situation which we are trying to work on.

MR. BOND: Now I understand. Thank you.

THE ROLE OF THE COMMITTEE

DR. OLIVER: The third area has to do with the role of the Committee, how the Committee should perform and act. This will be reported by Mr. Robert Rummel, formerly of TWA.

MR. RUMMEL: As indicated, the area of issues that I report on is the Committee role. First, I report on the answers to the general question "What role can the Committee play?"

The Committee answers are: first, appraise the adequacy and appropriateness of the HAPP effort and its programs.

Second, critique the programs in detail, identifying gaps, if any, and recommend suitable corrective actions.

Third, review programs and implementation progress from time to time, as appropriate.

Fourth, review HAPP goals and suggest additional goals as appropriate. And finally, review the HAPP budget when requested to do so.

I also have Committee answers to a series of specific questions on this area of issues. The first specific question posed is: "Should working subgroups be established for different program areas?"

The answer is, "Not at this time." However, this practice may be useful from time to time and should be considered when advantageous. If subgroups are established, the findings or conclusions should be reviewed and endorsed by the Committee.

Next question is, "How frequently should the Committee meet?" Answer: The next meeting should be convened in approximately four months. Subsequent meetings will be scheduled by the Chairman acting in liaison with the HAPP management and on the advice of the Committee members. It is currently contemplated that meeting intervals will average approximately nine months. The Committee members, of course, are free to recommend meetings when circumstances make this advisable. The next meeting is tentatively scheduled to be held during the week of March 26th, 1979.

The next question: "What are suggestions for the future agenda?" First, review of project specifics and program details. This item is tentatively scheduled for the next meeting, and is expected to be the prime subject area being treated.

Next, appraise the measurement equipment and associated techniques; next, review any changes that may occur in the HAPP program or its goals; then review impact of intervening regulatory actions, if any, which appear to impact the HAPP program. Then, of course, additionally the Committee members are encouraged to submit to the Chairman in a timely manner such additional proposed agenda items they believe to be appropriate.

The final question considered by the Committee is "What mechanism is best for communicating the Committee advice, that is, to HAPP?" The Committee felt that this meeting was sort of a guinea pig, but probably the best way is reports from rapporteurs and/or the Chairman. However, this procedure is, of course, subject to review by the permanent Chairman, and of course, the Committee will be responsive to any HAPP recommendations along this line.

CLOSING REMARKS

MR. BOND: I want to thank all of you for taking your time and contributing to helping, not only ourselves, but EPA and the other federal agencies who are in the end going to be called on the carpet if something goes wrong. My concern primarily is to make sure that nothing goes wrong. After all, that is when I get called on the carpet to answer before the Congress or the people. By definition something has gone wrong when that happens, but it is a long-term benefit if the globe is served, and I really do appreciate your helping me with that.

Thank you all for being here. I want to reiterate how grateful I am to everyone, especially those from across the sea who have come to work with us on this. It has to be a subject of world-wide significance, and one in which all the peoples of the world are interested, and from the study of which they will benefit.

Thank you very much indeed.

APPENDIX 1

HIGH ALTITUDE POLLUTION PROGRAM

SCIENTIFIC ADVISORY COMMITTEE

HIGH ALTITUDE POLLUTION PROGRAM SCIENTIFIC ADVISORY COMMITTEE Appendix 1

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APPENDIX 2

CHARTER

ORDER

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

1110.83A

4/14/78

SUBJ: HIGH ALTITUDE POLLUTION PROGRAM SCIENTIFIC ADVISORY COMMITTEE

1. PURPOSE. This order amends the charter of the High Altitude Pollution Program Technical Advisory Committee and changes its name to the HIGH ALTITUDE POLLUTION PROGRAM SCIENTIFIC ADVISORY COMMITTEE.

2. DISTRIBUTION. This order is distributed to division level in Washington and centers and director level in the regions.

3. CANCELLATION. Order 1110.83, High Altitude Pollution Program Technical Advisory Committee, is canceled.

4. BACKGROUND. The Office of Environmental Quality, Federal Aviation Administration (FAA), has established the High Altitude Pollution Program (HAPP) charged with a continuing effort to determine quantitatively the requirements for reduced cruise-altitude exhaust emissions by high altitude aircraft and to determine what regulatory action, if any, is needed to avoid environmental degradation. Accordingly, HAPP must pursue programs related to aircraft engine emissions improvement, aircraft operations, stratospheric measurements, computer modeling of stratospheric processes, laboratory measurements related to stratospheric phenomena, and monitoring of stratospheric phenomena. HAPP has the lead role for the Department of Transportation in carrying out U.S. responsibilities defined in the May 1976 Tripartite Agreement Regarding Monitoring of the Stratosphere, which was signed as a result of one of the actions directed by the Secretary in his February 4, 1976, decision on Concorde. The program must draw upon FAA-sponsored research and on the work of other U.S. and international organizations. It has implications for the aviation manufacturers, airlines, and the general public, both in the United States and internationally. For these reasons, it has been determined necessary to have a HAPP Scientific Advisory Committee to serve the manager of HAPP in assessing and advising on elements of HAPP.

5. OBJECTIVE AND SCOPE OF ACTIVITIES. The objective of the Committee is to review the scope, adequacy, and priorities of HAPP, advise on areas of research that may contribute to the analyses conducted by HAPP, appraise analyses conducted, advise of relevant results in related fields of investigation, and assist in coordinating the relevant programs of other Government agencies with those of HAPP.

6. DESCRIPTION OF DUTIES. The Committee's activity is limited to program review and submission of recommendations and advice to the HAPP program manager.

7. ORGANIZATION AND ADMINISTRATION.

* a. The HAPP Scientific Advisory Committee shall have up to twenty-five * members consisting of representatives of the aviation industry and scientists and engineers from Government, specifically including, but not limited to, representatives of the Department of Defense, the Environmental Protection Agency, the National Aeronautics and Space Administration, and the National Oceanic and Atmospheric Administration, industry, and universities. Persons chosen for membership on the Committee are selected on the basis of their recognized expertise and ability to contribute significant advice to the FAA in technical areas, such as aircraft engine emissions measurement or improvement; aircraft operations; stratospheric measurements; computer modeling of stratospheric processes; laboratory measurements related to stratospheric phenomena; and monitoring of stratospheric phenomena. Committee participation by non-Government members does not make them special Government employees. The non-Government members shall be selected by the Associate Administrator for Policy Development and Review, with the approval of the Administrator and the Secretary of Transportation, and such members shall be selected so as to be fairly balanced in terms of points of view represented and functions to be performed by the Committee.

* b. The Administrator is the sponsor of the Committee and shall appoint the chairman. The Director of Environmental Quality is responsible for pro- * viding the administrative support for the Committee and shall provide a secretariat. The executive director shall be the FAA's Associate Administrator for Policy Development and Review. The Committee shall not conduct any meeting in the absence of the executive director or the designated alternate. The executive director or the designated alternate, who as the designated Federal employee, shall be authorized to adjourn any advisory committee meeting whenever he determines adjournment to be in the public interest.

* c. The chairman shall be responsible for: *

(1) Determining, with approval of the executive director, when a meeting is required.

(2) Formulating an agenda for each meeting, which will be approved in advance by the executive director.

(3) Providing for notice to all members of the time, place, and agenda for any meeting.

(4) Conducting the meeting.

(5) Providing for the taking of minutes at each meeting and certifying the accuracy of the minutes.

d. The number of meetings is expected to be one, and possibly two, per year.

e. Detailed minutes shall be kept of each Committee meeting. The minutes shall include the time and place of the meeting; a list of Committee members and staff and agency employees present at the meeting; a complete summary of matters discussed and conclusions reached; copies of all reports received, issued, or approved by the Committee; a description of the extent to which the meeting was open to the public; a description of public participation, including a list of members of the public who presented oral or written statements; and an estimate of the number of members of the public who attended the meeting.

f. The Committee meetings shall be open to the public, and timely notice of such meetings shall be published in the Federal Register at least 15 days before the meeting. The proposed agenda, as well as the time and place of the meeting and information that the meeting will be open to the public, shall be included in the notice which shall be forwarded to the Chief Counsel, Attention: Rules Dockets Section, AGC-24, approximately 30 days before the meeting. Other forms of notice, such as press releases, are to be used to the extent practicable.

g. Members of the Committee who are full-time employees of the United States shall serve without compensation but may be allowed transportation and per diem in lieu of subsistence and other expenses, in accordance with the Department of Transportation's Civilian Travel Regulations.

8. ESTIMATED COST. The estimated annual operating cost of the Committee is $10,000, which includes the travel costs and compensation of the members and miscellaneous costs, such as the printing and issuance of reports. Approximately 0.2 employee-years will be required to support the Committee, including both professional and secretary services.

9. COMPENSATION. Members of the Committee who are not full-time employees of the United States, while attending meetings of the Committee or otherwise engaged in the business of the Committee, shall be entitled to compensation of $100 per day and transportation and per diem in lieu of subsistence and other expenses in accordance with the Department of Transportation's Civilian Travel Regulations.

10. PUBLIC PARTICIPATION. Each Committee meeting shall be open to the public and interested persons shall be permitted to attend, appear before, or file written statements with the Committee, subject to the limitations contained in the exception to the Freedom of Information Act (Title 5, U.S. Code 552(b)) and also subject to limitations of space and time.

11. AVAILABILITY OF RECORDS. Subject to the limitations contained in the exceptions of the Freedom of Information Act (Title 5, U.S. Code 552(b)), records, reports, transcripts, minutes, and other documents that are made available to, or prepared for or by, the Committee shall be available for public inspection and copying at the Office of Public Affairs 800 Independence Avenue, S.W., Washington, D.C. 20591. Fees shall be charged for information furnished to the public in accordance with the fee schedule published in Part 7 of Title 49, Code of Federal Regulations.

12. PUBLIC INTEREST. The formation and use of the HAPP Scientific Advisory Committee is determined to be in the public interest in connection with the performance of duties imposed on FAA by law.

13. EFFECTIVE DATE AND DURATION. This charter was filed on June 12, 1978, which is its effective date. The Committee will remain in existence for two years subsequent to this date, unless sooner terminated or extended. (Since HAPP will be in effect for eight years, the Committee will be needed for eight years. Accordingly, the charter will be refiled after the two-year period.)

Langhorne Bond
Administrator